

Agency Ecosystem Review Team Meeting
June 4, 1996
Staff Notes

Attendance List:

Dick Daniel - CALFED
Sharon Gross - CALFED
Lester Snow - CALFED
Larry Puckett - CVPIA/CDFG
Jean Elder - USFWS
Pete Chadwick - CDFG
Bill Laudermilk - CDFG
Don Stevens - CDFG
Terry Mills - CDFG
Jim White - CDFG
Jim Starr - CDFG
Steve Ford - CDWR
Leo Winternitz - CDWR
Bellory Fong - CDWR
Kate Hansel - CDWR
Bruce Herbold - EPA
Jim Monroe - USACE
Tom Cannon - CALFED consulting team/Jones and Stokes
Mark Littlefield - USFWS
Ed Littrell - CDFG
Dale Hoffman - CDWR/SJRMF
Rick Soehren - CALFED
Russ Brown - CALFED consulting team/Jones and Stokes

INTRODUCTION

The meeting was held for one primary purpose: to discuss the component approach for alternatives development.

LS: Need to zero in on what we want from an ecosystem view. Need to focus on the keys to the conflict. The ERT should focus on biological issues. Hopes to get the ERT together with the operators to resolve issues in Phase II. This work can start now.

SOME MAJOR POINTS

1. Phase II can start with specifying timing of flows and exports. ERT may be too large a group in which to develop specifications for flows and exports: subgroup may be needed.
2. Do short term goals/targets for Tuolumne River fall chinook salmon include a hatchery?

Time Value of water/exports/outflow

DS: exhibits 2 and 3 of the 1992 SWRCB hearing provides insights on striped bass, but can not use the models to determine importance of a single month. (Models use total seasonal - April-July - exports and flows.)

PC: Bay species like Crangon are also modeled with seasonal flows. Hard to make decisions on a monthly basis. Should consider life history and water year type when making such decisions. Should also look at historical conditions and apportion flow among the months based

on the historical proportions. Alan Jassby argues that X2 flows are interchangeable and difficult to sort out among the related variables. Interactions among outflows and exports make it hard to separate effects.

BH: Using historical data has autocorrelation problems.

DS: The bottom line is that there is only so much you can do with the data. The life histories and salvage are such that you would not expect key months. Doesn't matter when you pump the fish out of the Delta. Mistake to message more out of the data.

BH: Of course August is a better month if you have to export because striped bass are more effectively salvaged.

DS: Higher mortalities can occur in August because of high water temperature and predation. Agree that most of damage is done before August.

BH: Months like December are less important.

PC: Except in years like 1977, when under low storage there was low exports for 6 months, which allowed fish populations to build in the Delta. When pumping commenced with higher flows and rains late in the year many fish were lost at the pumps. Though populations were low at the end of 1977, they were very vulnerable to export pumps and impacts were high. In higher flow years losses may be high, but losses may be relatively low in terms of population size compared to effects in dry years.

BH: Splittail and delta smelt salvage patterns are dissimilar. It is hard to separate diversion and habitat (flow) effects.

DS: Striped bass salvage losses are high when adjusted for predation losses in front of the facilities. Loss is very significant.

PC: Yet salvage losses are only half the problem.

BH: There is an outflow/diversion/entrainment interaction: tough to separate these effects.

San Joaquin Salmon - Bill Laudermilk (DFG)

Salmon project workteam - DFG and FWS.

Mosssdale survey of smolts in spring since 1988.

Real-time monitoring now from August through June.

Moving to refine catch as index of abundance like that at Chipps and Sacramento.

Flows influence catch and timing of catch at Mosssdale.

Downstream of Mosssdale catch is influenced by inflow, exports, and tides.

Key is what happens in dry years with river flow to export relationship.

In wet years it is not clear that anything affects Chipps survival.

Timing may be affected. See exh 25 of 92 hearings.

We may be trying to split hairs at the tail end of the spring emigration.

We are trying to create stimuli to improve timing and survival.

Cramer's screw traps in lower Tuolumne shows patterns of fish response to flows in the Tuolumne.

Tuolumne Settlement Agreement with FERC may help.

Only in wet years are there adequate flows for salmon survival.

BH: We will now see more flows in the intermediate range with the Accord. Need to set up studies to answer questions about flow effects.

BL: Juveniles leave in February of wet years and into June in dry years.

JW: Historically fish could tolerate warmer Delta temperatures. Tuolumne fish must now make a suicide run through the Delta in a June release. Since they acclimate to these conditions they may be able to tolerate the high temperatures (up to 75F).

BH: The 100 TAF of San Joaquin water could be used to pulse the fish downstream in drier years.

BL: San Joaquin salmon populations cycle on decade level.

PC: We should look at salvage peaks in recent years to see if salvage increased when pumping increased.

DS: In dry years some low level of May pumping could occur.

DD: What about ramping criteria? Real-time monitoring?

BL: To get the Ops Group to release water for fish has to be for a good cause. Have to show a cost-benefit.

PC: In 77/78 winter, moderate outflow still got a lot of SJ salmon at the pumps. It would be very difficult to get water people to let that first pulse after a drought go by.

LW: In those years SJ flows were high and pumping started after the first pulse - salvage still shot up despite small population sizes at that time after a drought.

BH: What if we waited several weeks before starting pumping?

JW: This year salvage went up sharply with number salvaged related to pumping rate.

BL: Juvenile salmon may be keying on "downstream" flow toward pumps.

BH: What are salmon queue's? Chemical gradients? Flow gradients? Tides?

BL: Tagged smolts released below Old River into the SJ sometimes move back upstream. The FWS are now monitoring real-time at Turner Cut to see if salmon split there with the flow (downstream or south to pumps).

LW: Don't be too optimistic: its a tidal problem; problem with net efficiency.

BH: We can design studies, but we can't determine results in advance. We need to identify the issue, then do studies to help us reach our stated goals.

DD: Relative to SJ salmon, does the value of flow diminish after 6/15?

LW: 3/15-6/15 most important. The water temp in SJ are now 72+. Do we want to continue to export reductions under these conditions knowing salmon survival is highly questionable under these conditions.

BL: A cooling trend and higher flows are expected in coming week.

DD: If you had 30 days of flow pulse when would you use it?

BL: It would depend on the year type.

TM: All salmon shift their queues: flows, turbidity and important on Sac and tribs. Vary with year. Whatever system is in place has to be flexible.

SF: Keep the same 30 day protection period, but provide a greater amount of protection (flow). How important is the waning period?

JW: Shrinking the window would not be good.

BL: Genetically it would be a bad idea.

BH: Flexibility is key. Supplemental storage would provide flexibility. Develop flexibility but monitor to learn when best to use it.

BL: Capitalize on adaptive management strategy like this.

DD: Flexibility may impact on water supply reliability.

BH: Disagree: more flexibility allows more ways to meet demands.

PC: Flexibility could bring less reliability.

DD: Risks will be taken with water allocated to biologists.

Other Issues relating to timing

BH: Starry flounder and Crangon aren't affected by exports, only outflow.

PC: Some information on life history of white sturgeon may help determine what is best for them.

TM: There is no information for some species.

LW: We have learned much since the SWRCB 92 hearings. Real time monitoring provided much on localized movement.

DS: We have learned that through-Delta conveyance is not good. Hopeless: an isolated system is needed.

LW: Broad scale timeframes would still help.

SF: Managing on real-time data makes it difficult to judge values other than for specific species. We haven't figured out how to make tradeoffs: fish vs. water, or fish vs. fish.

DS: The decisions being made relative to fish have had little benefit to date. Need something big to change present patterns. What we have been talking about on timing will be of minimal benefit.

LS: Single actions may not change things, but hundreds of such actions will contribute. Would it help this discussion to assume a dual system of conveyance? Consider the big picture with wet year storage held for flows in dry years.

DS: Having water stored in the south Delta in dry years may not help, as there would be a tendency to want to save it to meet future demands. Besides feeding demands with south Delta storage will reduce instream flows from the reservoirs to the Delta.

LW: Guarantees are a universal problem with the program.

DD: For the long term we should develop more flexibility - then learn how to use it most effectively.

PC: There will be difficulty in estimating benefits precisely.

BH: Would like to see an alternative that goes as far as possible without a Peripheral Canal. Then look at the added benefit of a PC in comparison.

DD: Storage can help without a PC. When can we fill such storage?

BH: Suisun and Delta components of striped bass: Suisun only affected by outflow.

DS: Accord jacks up flows early in year, lowers summer flows which is worse for striped bass.

PC: We need a smaller group to really make headway with recommendations for flows and exports.

DS: Analysis used in draft HCP for pen rearing striped bass would be helpful.

SF: The series of EIR/EIS's on the South Delta have some tools for what we are trying to do.

TM: Why not discuss operating constraints?

SF: Consider the suite of measures under Article 7. Use our best judgments on how to operate and then run through tools to get relative benefits. Adjust as needed. Build 3-4 alts through tentative process. Problem is tradeoffs.

PC: Need an interagency team to work on this for a range of alts being considered. Then bring results back to this group for review. Could take a lot of time.

BH: IEP has offered its work groups for this purpose.

SF: That may put too much focus on fisheries.

BL: Strategy should involve delineating core and essential features, and developing ecosystem quality objectives. Need to consider role of hatcheries because restoration of salmon populations can't be accomplished through habitat enhancement. It has been hard to perceive any benefits from habitat enhancement to date. Flows are dominant factor. Not much is offered for San Joaquin in CALFED program. Gravel will only get us 13 % toward recovery. There are not enough adults to saturate the habitat we have. Need a better package for recovery with more flows. Settlement Agreement could get some. Could get 200 TAF from Merced ID above the 100 TAF from CALFED. Need a mixture of actions. Feather River hatchery fish are showing up in San Joaquin tribs: not good. Need flood plain redress - don't allow breaches in levees that open side ponds in lower river and trap salmon. Also need isolation from side pond predators. \$116 million for habitat still won't solve problems. Water temperature problems on Merced and Stanislaus in Oct/Nov despite adequate flows. Do we need power bypasses as we have done at Shasta? Do we need to purchase water? We should supplement with hatchery fish. Monitor effectiveness of our actions. Hatchery is needed now, not more gravel. Gravel will help in long term after Delta is "fixed". Many of our hatchery fish are second generation hatchery fish. Merced hatchery has been a success: 250 females has produced 1.5 million smolts. Run is improving. Hatchery fish help saturate capacity.

SF: How will CALFED handle the hatchery issue?

DS: What is the risk? Genetics is a small risk, since there is a problem with straying already.

BL: If MID has more conjunctive use, they may divert more in wetter years and less in dry years.

KH: Strategy criteria on P5 does not exclude hatcheries, so why not include it in the plan to start.

BL: Gravel restoration below Don Pedro did little to help run. Actions like this will do little to help the salmon, thus the need for the hatchery. Need a framework agreement with Modesto-Turlock Irrigation District. Need a EIR/EIS on the hatchery.

PC: BL's proposal is more than proposed by CALFED.

SF: How to handle debate? What is in and what is out? Four Pumps Program will follow CALFED lead.

TM: How can the FWS support expansion of Coleman Hatchery and not the Tuolumne hatchery?

DS: We have considered a whole group of ideas to improve the salmon. At least we know that the hatchery will put fish in the river.

PC: How does the project mode for the hatchery relate to the CALFED project mode?